IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An onboard fuel cell system comprising:

a fuel cell which may be supplied with hydrogen gas and oxidative gas, which is able to generate electric power using the hydrogen gas and the oxidative gas, and which is able to `1discharge hydrogen-off gas and oxygen-off gas that have been consumed;

a first flow passage which leads to a hydrogen-off gas exhaust port of the fuel cell and through which the discharged hydrogen-off gas can flow;

a second flow passage which leads to an oxygen-off gas exhaust port of the fuel cell and through which the discharged oxygen-off gas can flow;

a mixing portion which is connected to receive the discharged hydrogen-off gas and the discharged oxygen-off gas from the first and second flow passages respectively and in which the oxygen-off gas may be mixed with the hydrogen-off gas;

a third flow passage which leads from the mixing portion and through which the mixed gases can flow so that the hydrogen-off gas may be discharged to the atmosphere;

a valve which is disposed in the first flow passage; and

a control portion ~~which controls~~ programmed to control the valve to open and close the valve to allow or block flow of the hydrogen-off gas to the mixing portion and thereby control flow of hydrogen-off gas which is mixed with oxygen-off gas in the mixing portion;

wherein the control portion ~~controls~~ is programmed to control feeding of hydrogen-off gas ~~and oxygen-off gas~~ to the mixing portion so that a proportion of hydrogen-off gas fed to the mixing portion is sufficiently diluted in the mixing portion such that a mixture of the hydrogen-off gas and the oxygen-off gas ~~exiting~~ in the mixing portion avoids ignition, the mixture subsequently exiting the mixing portion.

Claim 2 (Withdrawn): The onboard fuel cell system according to claim 1, wherein

the mixing portion comprises an oxygen-off gas-introducing branch flow passage which branches off from the second flow passage to introduce the oxygen-off gas from the second flow passage in a shunted manner and a mixing chamber to which the oxygen-off gas-introducing branch flow passage and the first flow passage lead and in which the hydrogen-off gas and the oxygen-off gas may be mixed with each other and which has such an enlarged volume that the mixed gases can flow into the third flow passage, and

the second flow passage merges with the third flow passage downstream of a location where the second flow passage branches off from the oxygen-off gas-introducing branch flow passage.

Claim 3 (Withdrawn): The onboard fuel cell system according to claim 2, wherein

a pressure-loss member for causing a pressure loss of a fluid flowing through the second flow passage is disposed in the second flow passage between the location where the second flow passage branches off from the oxygen-off gas-introducing branch flow passage and a location where the second flow passage merges with the third flow passage.

Claim 4 (Withdrawn): The onboard fuel cell system according to claim 3, wherein the pressure-loss member is a muffler.

Claims 5-7 (Cancelled).

Claim 8 (Currently Amended): An onboard fuel cell system comprising:

a fuel cell which may be supplied with hydrogen gas and oxidative gas, which is able to generate electric power using the hydrogen gas and the oxidative gas, and which is able to discharge hydrogen-off gas and oxygen-off gas that have been consumed;

a first flow passage which leads to a hydrogen-off gas exhaust port of the fuel cell and through which the discharged hydrogen-off gas can flow;

a second flow passage which leads to an oxygen-off gas exhaust port of the fuel cell and through which the discharged oxygen-off gas can flow;

a mixing portion which is connected to receive the discharged hydrogen-off gas and the discharged oxygen-off gas from the first and second flow passages respectively and in which the oxygen-off gas may be mixed with the hydrogen-off gas;

a third flow passage which leads from the mixing portion and through which the mixed gases can flow so that the hydrogen-off gas may be discharged to the atmosphere;

a valve which is disposed in the first flow passage;

a hydrogen gas-supplying source for supplying hydrogen gas;

a fourth flow passage which leads to a hydrogen gas-supplying port of the fuel cell and through which the supplied hydrogen gas can flow;

a fifth flow passage which connects a first location in the first flow passage between the exhaust port of the fuel cell and the valve with a second location in the fourth flow passage and through which the hydrogen-off gas discharged from the fuel cell can flow to be returned to the fourth flow passage,

wherein the valve is downstream of the first location of the first flow passage and hydrogen-off gas which passes through the valve exits the onboard fuel cell system without further passing through the fuel cell; and

a control portion~~, wherein the control portion controls~~ programmed to control a proportion of hydrogen-off gas fed to the mixing portion so that hydrogen-off gas fed to the mixing portion is sufficiently diluted in the mixing portion such that a mixture ~~exiting~~ of the hydrogen-off gas and the oxygen-off gas in the mixing portion avoids ignition, the mixture subsequently exiting the mixing portion.

Claim 9 (Withdrawn): The onboard fuel cell system according to claim 8, wherein the hydrogen gas-supplying source contains a hydrogen gas-occluding alloy capable of occluding and discharging the hydrogen gas.

Claim 10 (Withdrawn): The onboard fuel cell system according to claim 9, further comprising:

a pump which is disposed in the fifth flow passage and by which the hydrogen-off gas discharged from the fuel cell may be discharged to the fourth flow passage; and

a sixth flow passage through which hydrogen gas can flow from the hydrogen gas-occluding alloy to the pump,

wherein hydrogen gas delivered from the hydrogen gas-occluding alloy is supplied to the fuel cell via the pump if the hydrogen gas-occluding alloy is at a low temperature.

Claim 11 (Withdrawn): The onboard fuel cell system according to claim 10, further comprising:

a seventh flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas can flow;

a flow rate-changing portion which is disposed in the second flow passage or the seventh flow passage and which can change the flow rate of the discharged oxygen-off gas; and

a control portion adapted to control the valve and the flow rate-changing portion,

wherein the control portion can increase the flow rate of the discharged oxygen-off gas from a predetermined flow rate by means of the flow rate-changing portion at the same time as opening the valve.

Claim 12 (Withdrawn): The onboard fuel cell system according to claim 10, further comprising:

a seventh flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas can flow;

a flow rate-changing portion which is disposed in the second flow passage or the seventh flow passage and which can change the flow rate of the discharged oxygen-off gas; and

a control portion which controls the valve and the flow rate-changing portion,

wherein the control portion opens the valve if the flow rate of the discharged oxygen-off gas is higher than a predetermined flow rate.

Claim 13 (Previously Presented): The onboard fuel cell system according to claim 1,

wherein the control portion comprises means for opening and closing the valve at intervals of a relatively short period when delivering the discharged oxygen-off gas to the mixing portion.

Claim 14 (Previously Presented): The onboard fuel cell system according to claim 1, further comprising:

a flow rate-reducing portion, including a buffer, which is disposed in the first flow passage between the valve and the mixing portion, and which reduces the flow rate of the hydrogen-off gas flowing from the valve to deliver a reduced flow rate of the hydrogen-off gas to the mixing portion such that concentration of hydrogen after passing through the mixing portion is reduced to the possibility of ignition.

Claim 15 (Previously Presented): The onboard fuel cell system according to claim 1,

wherein the control portion comprises means for opening the valve if the concentration of hydrogen in the discharged hydrogen-off gas drops below a reference concentration.

Claim 16 (Withdrawn): The onboard fuel cell system according to claim 1, wherein a diffusion member for diffusing gas flowing out from an end opening of the third flow passage in the radial direction of the opening is disposed at the end of the third flow passage.

Claim 17 (Withdrawn): The onboard fuel cell system according to claim 16, wherein a shield member is disposed at the end of the third flow passage in such a manner as to cover the end while being spaced therefrom by a predetermined distance, and the shield member has at least one pore whose diameter is equal to or greater than a predetermined diameter.

Claim 18 (Withdrawn): The onboard fuel cell system according to claim 17, wherein the shield member is either meshed or punched porously.

Claim 19 (Cancelled).

Claim 20 (Withdrawn): The onboard fuel cell system according to claim 1, further comprising:

a fourth flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas can flow; and

a water-vapor exchanger in which water vapor can be exchanged between oxygen gas supplied to the fuel cell via the fourth flow passage and oxygen-off gas discharged from the oxidative gas exhaust port of the fuel cell via the second flow passage.

Claims 21-31 (Cancelled).

Claim 32 (Withdrawn): The onboard fuel cell system according to claim 1, wherein said mixing portion has larger diameter than that of said first and second flow passages.

Claim 33 (Withdrawn): The onboard fuel cell system according to claim 32, wherein said mixing portion has larger volume per unit length than said first and second flow passages.

Claim 34 (Withdrawn): The onboard fuel cell system according to claim 32, wherein said mixing portion has a zig-zag shape through which the mixed gases can flow.

Claim 35 (Withdrawn): The onboard fuel cell system according to claim 32, wherein said mixing portion has a shield plate which partitions the mixing portion to provide said zig-zag shape.

Claim 36 (Withdrawn): The onboard fuel cell system according to claim 32, further comprising a catalyst in said mixing portion.

Claim 37 (Previously Presented): The fuel cell system according to claim 14, wherein the flow-rate reducing portion has an inlet port and an outlet port, wherein a diameter of the outlet port is smaller than that of the inlet port.

Claim 38 (Previously Presented): The fuel cell system according to claim 37, wherein a portion of the flow reducing portion between the inlet port and the outlet port has a volume per unit length greater than that of the inlet port or the outlet port.

Claim 39 (Previously Presented): The fuel cell system according to claim 37, wherein the flow reducing portion has a variable volume.

Claims 40-45 (Canceled).

Claim 46 (Withdrawn): The onboard fuel cell system according to claim 1, further comprising:

a hydrogen gas-supplying source which supplies hydrogen gas;

a fourth flow passage which leads to a hydrogen gas-supplying port of the fuel cell and through which the supplied hydrogen gas flows;

a fifth flow passage which branches off from the fourth flow passage and discharges the hydrogen gas flowing in the fourth flow passage to the atmosphere via a relief valve; and

a mixing portion which is disposed downstream of the relief valve in the fifth flow passage, and which leads to the second flow passage and which mixes the oxygen-off gas with the hydrogen-off gas.

Claim 47 (Withdrawn): The onboard fuel cell system according to claim 1, further comprising:

a hydrogen gas-supplying source which supplies hydrogen gas;

a fourth flow passage which leads to a hydrogen gas-supplying port of the fuel cell and through which the supplied hydrogen gas flows;

a fifth flow passage which branches off from the fourth flow passage and discharges the hydrogen gas flowing in the fourth flow passage to the atmosphere via a relief valve; and

a hydrogen diluter which is disposed downstream of the relief valve in the fifth flow passage, and which reduces the concentration of the hydrogen.

Claim 48 (Withdrawn): The onboard fuel system according to claim 47, wherein catalyst is provided in the hydrogen diluter.

Claim 49 (Withdrawn): The onboard fuel cell system according to claim 1, further comprising:

a hydrogen gas-supplying source which supplies hydrogen gas;

a fourth flow passage which leads to a hydrogen gas-supplying port of the fuel cell and through which the supplied hydrogen gas flows;

a fifth flow passage which branches off from the fourth flow passage and discharges the hydrogen gas flowing in the fourth flow passage to the atmosphere via a relief valve; and

a catalyst reaction portion which is disposed downstream of the relief valve in the fifth flow passage, which causes hydrogen gas with oxygen to react with each other with the aid of a catalyst, and which reduces the concentration of hydrogen.

Claim 50 (Cancelled).

Claim 51 (Currently Amended): An onboard fuel cell system comprising:

a fuel cell which may be supplied with hydrogen gas and oxidative gas, which is able to generate electric power using the hydrogen gas and the oxidative gas, and which is able to discharge hydrogen-off gas and oxygen-off gas that have been consumed;

a first flow passage which leads to a hydrogen-off gas exhaust port of the fuel cell and through which the discharged hydrogen-off gas can flow;

a second flow passage which leads to an oxygen-off gas exhaust port of the fuel cell and through which the discharged oxygen-off gas can flow;

a mixing portion which is connected to receive the discharged hydrogen-off gas and the discharged oxygen-off gas from the first and second flow passages respectively and in which the oxygen-off gas may be mixed with the hydrogen-off gas;

a third flow passage which leads from the mixing portion and through which the mixed gases can flow so that the hydrogen-off gas may be discharged to the atmosphere;

a valve which is disposed in the first flow passage and which may be opened or closed so that the hydrogen-off gas is allowed to flow into or is blocked from flowing into the mixing portion;

a hydrogen gas-supplying source for supplying hydrogen gas;

a fourth flow passage which leads to a hydrogen gas-supplying port of the fuel cell and through which the supplied hydrogen gas can flow;

a fifth flow passage which connects a first location in the first flow passage between the exhaust port of the fuel cell and the valve with a second location in the fourth flow passage and through which the hydrogen-off gas discharged from the fuel cell can flow to be returned to the fourth flow passage, whereby the hydrogen-off gas discharged from the fuel cell may circulate back to the fuel cell,

wherein the valve is downstream of the first location of the first flow passage and ~~hydrogen-off-gas~~ hydrogen-off gas which flows through the valve when the valve is opened does not circulate back to the fuel cell; and

a control portion ~~which controls~~ programmed to control opening and closing of said valve, wherein said control portion comprises means for opening the valve if the concentration of hydrogen in the discharged hydrogen-off gas drops below a reference concentration such that hydrogen-off gas passes through the valve and exits the onboard fuel cell system in response to a determination that the concentration of hydrogen in the discharged hydrogen-off gas is below the reference concentration.

Claim 52 (Currently Amended): An onboard fuel cell system comprising:

a fuel cell which may be supplied with hydrogen gas and oxidative gas, which is able to generate electric power using the hydrogen gas and the oxidative gas, and which is able to discharge hydrogen-off gas and oxidative-off gas that have been consumed;

a circulation flow passage which leads from a hydrogen-off gas exhaust port of the fuel cell to a flow passage connected to a hydrogen gas-supplying port of the fuel cell;

a first flow passage ~~which leads to a hydrogen-off-gas exhaust port of the fuel cell~~ connected to the circulation flow passage and through which the discharged hydrogen-off gas can flow;

a second flow passage which leads to an oxidative-off gas exhaust port of the fuel cell and through which the discharged oxidative-off gas can flow;

a mixing portion which is connected to receive only the discharged hydrogen-off gas and the discharged oxidative-off gas from the first and second flow passages respectively and in which only the oxidative-off gas may be mixed with the hydrogen-off gas;

a third flow passage which leads from the mixing portion and through which the mixed gases containing only hydrogen-off gas and oxidative-off gas can flow so that the hydrogen-off gas may be discharged to the atmosphere;

a valve which is disposed in the first flow passage and which may be opened or closed so that the hydrogen-off gas is allowed to flow into or is blocked from flowing into the mixing portion; and

a control portion ~~which controls~~ programmed to control opening and closing of said valve,

wherein hydrogen-off gas which passes through the valve exits the system without further passing through the fuel cell, and

wherein the control portion ~~controls~~ is programmed to control a proportion of hydrogen-off gas fed to the mixing portion so that hydrogen-off gas fed to the mixing portion is sufficiently diluted in the mixing portion such that a mixture of the hydrogen-off gas and the oxygen-off gas in ~~exiting~~ the mixing portion avoids ignition, the mixture subsequently exiting the mixing portion.

Claim 53 (Currently Amended): An onboard fuel cell system comprising:

a fuel cell which may be supplied with hydrogen gas and oxidative gas, which is able to generate electric power using the hydrogen gas and the oxidative gas, and which is able to discharge hydrogen-off gas and oxidative-off gas that have been consumed;

a circulation flow passage which leads from a hydrogen-off gas exhaust port of the fuel cell to a flow passage connected to a hydrogen gas-supplying port of the fuel cell;

a first flow passage ~~which leads to a hydrogen-off gas exhaust port of the fuel cell~~ connected to the circulation flow passage and through which the discharged hydrogen-off gas can flow;

a second flow passage which leads to an oxidative-off gas exhaust port of the fuel cell and through which the discharged oxidative-off gas can flow;

a mixing portion which is connected to receive the discharged hydrogen-off gas and the discharged oxidative-off gas from the first and second flow passages respectively and in which the oxidative-off gas may be mixed with the hydrogen-off gas;

a third flow passage which leads from the mixing portion and through which the mixed gases can flow so that the hydrogen-off gas may be discharged to the atmosphere;

a valve which is disposed in the first flow passage, wherein hydrogen-off gas passes through said valve and toward the mixing portion when said valve is in an opened position and wherein hydrogen-off gas which passes through the valve exits the onboard fuel cell system without further passing through the fuel cell;

wherein the mixing portion is connected to receive only the discharged hydrogen-off gas and the discharged oxidative-off gas from the first and second flow passages respectively

a control portion ~~which controls~~ programmed to control opening and closing of said valve, wherein said control portion comprises means for opening the valve if the concentration of hydrogen in the discharged hydrogen-off gas drops below a reference concentration such that hydrogen-off gas passes through the valve and exits the onboard fuel cell system in response to a determination that the concentration of hydrogen in the discharged hydrogen-off gas is below the reference concentration.

Claim 54 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the control portion controls the valve to open or close according to an elapsed time.

Claim 55 (Previously Presented): The onboard fuel cell system according to claim 1, further including a timer, and wherein said control portion controls said valve based on said timer.

Claim 56 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the control portion controls opening of the valve such that the valve is not open for longer than a predetermined time.

Claim 57 (Previously Presented): The onboard fuel cell system according to claim 56, wherein the predetermined time is equal to or less than one second.

Claim 58 (Canceled).

Claim 59 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the control portion controls the valve such that it is not open for greater than a predetermined amount of time.

Claim 60 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the control portion increases a flow of oxygen-off gas to the mixing portion such that an increased oxygen-off gas flow is provided when the valve is open.

Claim 61 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the oxygen-off gas is fed to the mixing portion with a compressor, and wherein the control portion opens the valve when an output of the compressor is higher than a predetermined value.

Claim 62 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the control portion repeatedly opens and closes the valve until a predetermined time has elapsed.

Claims 63-64 (Canceled).

Claim 65 (Previously Presented): The onboard fuel cell system according to claim 1, wherein a mixture exiting the mixing portion has a reduced possibility of ignition by at least one of the following:

(a) the control portion controls opening of the valve such that the valve is not open for longer than a predetermined time;

(b) the control portion increases a flow of oxygen-off gas to the mixing portion such that an increased oxygen-off gas flow is provided when the valve is open;

(c) the oxygen-off gas is fed to the mixing portion with a compressor, and the control portion opens the valve in response to a determination that an output of the compressor is higher than a predetermined valve; or

(d) a buffer is provided in the first flow passage to reduce a flow rate of hydrogen-off gas to the mixing portion.

Claim 66 (Previously Presented): The onboard fuel cell system according to claim 1, wherein the system includes at least one of a timer or a hydrogen concentration sensor, and wherein the control portion controls the valve based on the at least one of the timer or the hydrogen concentration sensor.

Claim 67 (Canceled).